

Appendix A

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2  
3 1. A computer-implemented system for associating target data with a product  
4 classification schema, the system comprising a data association module operable to:

5 access a first product classification schema, the first schema comprising a taxonomy  
6 comprising a hierarchy of classes into which products may be categorized, the first schema  
7 further comprising ontologies associated with one or more of the classes, each ontology  
8 comprising one or more product attributes;

9 access target data to be associated with the first schema, the target data organized  
10 according to a second product classification schema;

11 determine one or more classes of the first schema with which at least a portion of the  
12 target data should be associated based on an automatic comparison, without translating the  
13 target data from the second schema to the first schema, between the target data and the  
14 product attributes of the ontologies of the first schema or between the target data and values  
15 for one or more of the product attributes of the ontologies of the first schema; and

16 associate the at least a portion of the target data with one or more classes of the first  
17 schema in response to determining, based on the automatic comparison, the one or more  
18 classes of the first schema with which the at least a portion of the target data should be  
19 associated.

1 2. The system of Claim 1, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including the name or an equivalent name of a product  
4 attribute included in the ontologies of these one or more classes of the first schema.

1 3. The system of Claim 1, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including values that match or are similar to values for  
4 a product attribute included in the ontologies of these one or more classes of the first schema.

1           4.       The system of Claim 1, wherein determining one or more classes of the first  
2       schema with which the at least a portion of the target data should be associated comprises  
3       identifying a portion of the target data including a range of values that matches or is similar  
4       to a range of values for a product attribute included in the ontologies of these one or more  
5       classes of the first schema.

1           5.       The system of Claim 1, wherein determining one or more classes of the first  
2       schema with which the at least a portion of the target data should be associated comprises  
3       identifying a portion of the target data including symbols that match or are similar to symbols  
4       associated with values for a product attribute included in the ontologies of these one or more  
5       classes of the first schema.

1           6.       The system of Claim 1, wherein determining one or more classes of the first  
2       schema with which the at least a portion of the target data should be associated comprises  
3       identifying a portion of the target data having formatting that matches or is similar to  
4       formatting of values for a product attribute included in the ontologies of these one or more  
5       classes of the first schema.

1           7.       The system of Claim 1, wherein determining one or more classes of the first  
2       schema with which the at least a portion of the target data should be associated comprises  
3       using vector space analysis to identify multiple portions of the target data including values  
4       that correspond to values for multiple product attributes included in the ontologies of these  
5       one or more classes of the first schema.

1           8.       The system of Claim 1, wherein determining one or more classes of the first  
2       schema with which the at least a portion of the target data should be associated comprises  
3       using statistical correlation techniques to identify portions of the target data including values  
4       that correspond to values for a product attribute included in the ontologies of these one or  
5       more classes of the first schema.

1           9.     The system of Claim 1, wherein the values for one or more of the product  
2 attributes of the ontologies of the first schema with which the target data may be compared  
3 are stored in one or more seller databases, the values in the seller databases being identified  
4 by one or more pointers associated with one or more classes of the first schema.

1           10.    The system of Claim 1, wherein associating the at least a portion of the target  
2 data with one or more classes of the first schema comprises associating one or more pointers  
3 to the target data with the one or more classes of the first schema.

1           11.    The system of Claim 1, wherein associating the at least a portion of the target  
2 data with one or more classes of the first schema comprises associating one or more pointers  
3 to specific portions of the target data with one or more product attributes included in the  
4 ontology of the one or more classes of the first schema.

1           12.     A method for associating target data with a product classification schema,  
2 comprising:

3                 accessing a first product classification schema, the first schema comprising a  
4 taxonomy comprising a hierarchy of classes into which products may be categorized, the first  
5 schema further comprising ontologies associated with one or more of the classes, each  
6 ontology comprising one or more product attributes;

7                 accessing target data to be associated with the first schema, the target data organized  
8 according to a second product classification schema;

9                 determining one or more classes of the first schema with which at least a portion of  
10 the target data should be associated based on an automatic comparison, without translating  
11 the target data from the second schema to the first schema, between the target data and the  
12 product attributes of the ontologies of the first schema or between the target data and values  
13 for one or more of the product attributes of the ontologies of the first schema; and

14                 associating the at least a portion of the target data with one or more classes of the first  
15 schema in response to determining, based on the automatic comparison, the one or more  
16 classes of the first schema with which the at least a portion of the target data should be  
17 associated.

1           13.     The method of Claim 12, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including the name or an equivalent name of a product  
4 attribute included in the ontologies of these one or more classes of the first schema.

1           14.     The method of Claim 12, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including values that match or are similar to values for  
4 a product attribute included in the ontologies of these one or more classes of the first schema.

1           15.     The method of Claim 12, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data including a range of values that matches or is similar  
4     to a range of values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           16.     The method of Claim 12, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data including symbols that match or are similar to symbols  
4     associated with values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           17     The method of Claim 12, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data having formatting that matches or is similar to  
4     formatting of values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           18.     The method of Claim 12, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     using vector space analysis to identify multiple portions of the target data including values  
4     that correspond to values for multiple product attributes included in the ontologies of these  
5     one or more classes of the first schema.

1           19.     The method of Claim 12, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     using statistical correlation techniques to identify portions of the target data including values  
4     that correspond to values for a product attribute included in the ontologies of these one or  
5     more classes of the first schema.

1           20.    The method of Claim 12, wherein the values for one or more of the product  
2 attributes of the ontologies of the first schema with which the target data may be compared  
3 are stored in one or more seller databases, the values in the seller databases being identified  
4 by one or more pointers associated with one or more classes of the first schema.

1           21.    The method of Claim 12, wherein associating the at least a portion of the  
2 target data with one or more classes of the first schema comprises associating one or more  
3 pointers to the target data with the one or more classes of the first schema

1           22.    The method of Claim 12, wherein associating the at least a portion of the  
2 target data with one or more classes of the first schema comprises associating one or more  
3 pointers to specific portions of the target data with one or more product attributes included in  
4 the ontology of the one or more classes of the first schema.

1           23.     Software for associating target data with a product classification schema, the  
2 software being embodied in a computer-readable medium and when executed operable to:

3                 access a first product classification schema, the first schema comprising a taxonomy  
4 comprising a hierarchy of classes into which products may be categorized, the first schema  
5 further comprising ontologies associated with one or more of the classes, each ontology  
6 comprising one or more product attributes;

7                 access target data to be associated with the first schema, the target data organized  
8 according to a second product classification schema;

9                 determine one or more classes of the first schema with which at least a portion of the  
10 target data should be associated based on a an automatic comparison, without translating the  
11 target data from the second schema to the first schema, between the target data and the  
12 product attributes of the ontologies of the first schema or between the target data and values  
13 for one or more of the product attributes of the ontologies of the first schema; and

14                 associate the at least a portion of the target data with one or more classes of the first  
15 schema in response to determining, based on the automatic comparison, the one or more  
16 classes of the first schema with which the at least a portion of the target data should be  
17 associated.

1           24.     The software of Claim 23, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including the name or an equivalent name of a product  
4 attribute included in the ontologies of these one or more classes of the first schema.

1           25.     The software of Claim 23, wherein determining one or more classes of the first  
2 schema with which the at least a portion of the target data should be associated comprises  
3 identifying a portion of the target data including values that match or are similar to values for  
4 a product attribute included in the ontologies of these one or more classes of the first schema.

1           26.     The software of Claim 23, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data including a range of values that matches or is similar  
4     to a range of values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           27.     The software of Claim 23, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data including symbols that match or are similar to symbols  
4     associated with values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           28.     The software of Claim 23, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     identifying a portion of the target data having formatting that matches or is similar to  
4     formatting of values for a product attribute included in the ontologies of these one or more  
5     classes of the first schema.

1           29.     The software of Claim 23, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     using vector space analysis to identify multiple portions of the target data including values  
4     that correspond to values for multiple product attributes included in the ontologies of these  
5     one or more classes of the first schema.

1           30.     The software of Claim 23, wherein determining one or more classes of the first  
2     schema with which the at least a portion of the target data should be associated comprises  
3     using statistical correlation techniques to identify portions of the target data including values  
4     that correspond to values for a product attribute included in the ontologies of these one or  
5     more classes of the first schema.

1           31.     The software of Claim 23, wherein the values for one or more of the product  
2 attributes of the ontologies of the first schema with which the target data may be compared  
3 are stored in one or more seller databases, the values in the seller databases being identified  
4 by one or more pointers associated with one or more classes of the first schema.

1           32.     The software of Claim 23, wherein associating the at least a portion of the  
2 target data with one or more classes of the first schema comprises associating one or more  
3 pointers to the target data with the one or more classes of the first schema

1           33.     The software of Claim 23, wherein associating the at least a portion of the  
2 target data with one or more classes of the first schema comprises associating one or more  
3 pointers to specific portions of the target data with one or more product attributes included in  
4 the ontology of the one or more classes of the first schema.

1           34.     A system for associating target data with a product classification schema, the  
2 system comprising:

3                 means for accessing a first product classification schema, the first schema comprising  
4 a taxonomy comprising a hierarchy of classes into which products may be categorized, the  
5 schema further comprising ontologies associated with one or more of the classes, each  
6 ontology comprising one or more product attributes;

7                 means for accessing target data to be associated with the first schema, the target data  
8 organized according to a second product classification schema;

9                 means for determining one or more classes of the first schema with which at least a  
10 portion of the target data should be associated based on a an automatic comparison, without  
11 translating the target data from the second schema to the first schema, between the target data  
12 and the product attributes of the ontologies of the first schema or between the target data and  
13 values for one or more of the product attributes of the ontologies of the first schema; and

14                 means for associating the at least a portion of the target data with one or more classes  
15 of the first schema in response to determining, based on the automatic comparison, the one or  
16 more classes of the first schema with which the at least a portion of the target data should be  
17 associated.

1           35.     A computer-implemented system for associating target data with a product  
2 classification schema, the system comprising a data association module operable to:

3                 access a first product classification schema, the first schema comprising a taxonomy  
4 comprising a hierarchy of classes into which products may be categorized, the first schema  
5 further comprising ontologies associated with one or more of the classes, each ontology  
6 comprising one or more product attributes;

7                 access target data to be associated with the first schema, the target data organized  
8 according to a second product classification schema;

9                 determine one or more classes of the first schema with which at least a portion of the  
10 target data should be associated based on a an automatic comparison, without translating the  
11 target data from the second schema to the first schema, between the target data and the  
12 product attributes of the ontologies of the first schema or between the target data and values  
13 for one or more of the product attributes of the ontologies of the first schema, the values  
14 being stored in one or more seller databases and identified by one or more pointers associated  
15 with one or more classes of the first schema; and

16                 associate the at least a portion of the target data with one or more classes of the first  
17 schema in response to determining, based on the automatic comparison, the one or more  
18 classes of the first schema with which the at least a portion of the target data should be  
19 associated, the target data being associated with the classes of the first schema using one or  
20 more pointers to the target data.

1           36.     A method for associating target data with a product classification schema, the  
2 method comprising:

3           accessing a first product classification schema, the first schema comprising a  
4 taxonomy comprising a hierarchy of classes into which products may be categorized, the first  
5 schema further comprising ontologies associated with one or more of the classes, each  
6 ontology comprising one or more product attributes;

7           accessing target data to be associated with the first schema, the target data organized  
8 according to a second product classification schema;

9           determining one or more classes of the first schema with which at least a portion of  
10 the target data should be associated based on a automatic comparison, without translating the  
11 target data from the second schema to the first schema, between the target data and the  
12 product attributes of the ontologies of the first schema or between the target data and values  
13 for one or more of the product attributes of the ontologies of the first schema, the values  
14 being stored in one or more seller databases and identified by one or more pointers associated  
15 with one or more classes of the first schema; and

16           associating the at least a portion of the target data with one or more classes of the first  
17 schema in response to determining, based on the automatic comparison, the one or more  
18 classes of the first schema with which the at least a portion of the target data should be  
19 associated, the target data being associated with the classes of the first schema using one or  
20 more pointers to the target data.

37. Software for associating target data with a product classification schema, the software being embodied in a computer-readable medium and when executed operable to:

access a first product classification schema, the first schema comprising a taxonomy comprising a hierarchy of classes into which products may be categorized, the first schema further comprising ontologies associated with one or more of the classes, each ontology comprising one or more product attributes;

access target data to be associated with the first schema, the target data organized according to a second product classification schema;

determine one or more classes of the first schema with which at least a portion of the target data should be associated based on an automatic comparison, without translating the target data from the second schema to the first schema, between the target data and the product attributes of the ontologies of the first schema or between the target data and values for one or more of the product attributes of the ontologies of the first schema, the values being stored in one or more seller databases and identified by one or more pointers associated with one or more classes of the first schema; and

associate the at least a portion of the target data with one or more classes of the first schema in response to determining, based on the automatic comparison, the one or more classes of the first schema with which at the least a portion of the target data should be associated, the target data being associated with the classes of the first schema using one or more pointers to the target data.